What is claimed is:

1. A method for repairing an abdominal aneurysm in an aorta with a graft system having first and second legs, each leg having a graft component and an aortic stent attached thereto, the aorta branching into two iliac arteries, the method comprising:

advancing each of the legs through a separate iliac artery;

aligning the aortic stents relative to one another in the aorta on one side of the aneurysm, the graft component of each leg extending into a respective iliac artery across the aneurysm; and

deploying the aligned aortic stents in the aorta in a manner that does not substantially occlude the aorta.

2. The method of claim 1 wherein each leg further includes an iliac stent, the method further comprising deploying the iliac stents in a respective iliac artery.

3. The method of claim 2 wherein each leg has a first end and a second end and wherein the length between the first and second ends of at least one of the legs is adjustable, the method further comprising adjusting the length of at least one of the first and second legs by positioning the second end of the leg a desired distance from the first end.

4. The method of claim 3 wherein at least one of the first and second legs is provided with a bellows region, the step of adjusting the length of at least one of the first and second legs including expanding or contracting the bellows portion of the leg to thereby adjust the length.

5. The method of claim 3 wherein at least one of the first and second legs includes a first segment and a second segment, the second segment being sized to fit within the first segment in a telescoping arrangement, the step of adjusting further comprising adjusting the relative position of the first and second segments such that the first end of the leg is a desired distance from the second.

6. The method of claim 4 wherein at least one of the first and second legs includes at least one gripping stent, the method further comprising deploying at least one gripping stent in the bellows region.

7. The method of claim 5 wherein at least one of the first and second legs includes at least one support stent, the method further including deploying at least one support stent within the second segment of the leg to maintain the relative position of the first and second segments after deployment.

8. A method for repairing an abdominal aneurysm in an aorta with a graft system having first and second ends, the aorta branching into two iliac arteries, the method comprising:

advancing the graft system through at least one iliac artery;

positioning the first end of the graft system in the aorta on one side of the aneurysm, the second end of the graft system extending across the aneurysm; and

deploying the first end of the graft system in the aneurysm in a manner that does not substantially occlude the aorta.

9. The method of claim 8 wherein the graft system includes an aortic stent attached to the first end of the graft system and wherein the step of deploying includes expanding the aortic stent radially outwardly to secure the first end of the graft system in the aorta.

10. The method of claim 8 wherein the graft system further includes an iliac stent attached to the second end of the graft system, the method further comprising deploying the iliac stent in the iliac artery.

11. The method of claim 10 wherein the length between the first and second ends is adjustable, the method further comprising adjusting the length of the graft system by positioning the second end a desired distance from the first end.

12. The method of claim 4 wherein the graft system is provided with a bellows region and wherein the step of adjusting the length of the graft system includes expanding or contracting the bellows portion to thereby adjust the length.

13. The method of claim 11 wherein the graft system includes a first segment and a second segment, the second segment being sized to fit within the first segment in a telescoping arrangement, and wherein the step of adjusting further comprises adjusting the relative position of the first and second segments such that the first end of the leg is a desired distance from the second.

14. The method of claim 12 wherein the graft system includes at least one gripping stent, the method further comprising deploying at least one gripping stent in the bellows region.

15. The method of claim 13 wherein the graft system includes at least one support stent, the method further including deploying at least one support stent to maintain the relative position of the first and second segments after deployment.

16. A method for repairing an abdominal aneurysm in an aorta with a graft system having first and second legs, each leg having a graft component with first and second ends, the first leg having a first aortic stent, the second leg having a second aortic stent, the stents capable of expansion from a first delivery position to a second deployed position, the aorta branching into two iliac arteries, the method comprising:

advancing the first leg through the aorta to a desired location on one side of the aneurysm;

deploying the first aortic stent so that it expands to its second deployed position, the first aortic stent causing the first end of the graft component to maintain a position on a first side of the aorta, the graft component of the first leg extending into a first iliac artery;

advancing the second leg through the aorta to a desired location adjacent the first leg, the graft component of the second leg extending into a second iliac artery; and

deploying the second aortic stent so that it expands to its second deployed position causing the first end of the second graft component to be positioned adjacent the first end of the first graft component on a second side of the aorta.

17. The method of claim 16 wherein each leg further includes an iliac stent attached to the second end of the graft component, the method further comprising deploying the iliac stents in a respective iliac artery.

18. The method of claim 17 wherein the length between the first and second ends of at least one of the legs is adjustable, the method further comprising adjusting the length of at least one of the first and second legs by positioning the second end of the leg a desired distance from the first end.

19. The method of claim 18 wherein at least one of the first and second legs is provided with a bellows region and wherein, the step of adjusting the length of at least one of the first and second legs includes expanding or contracting the bellows portion of the leg to thereby adjust the length.

20. The method of claim 18 wherein at least one of the first and second legs includes a first segment and a second segment, the second segment being sized to fit within the first segment in a telescoping arrangement, and wherein the step of adjusting further comprises adjusting the relative position of the first and second segments such that the first end of the leg is a desired distance from the second.

21. The method of claim 19 wherein at least one of the first and second legs includes at least one gripping stent, the method further comprising deploying at least one gripping stent in the bellows region.

22. The method of claim 20 wherein at least one of the first and second legs includes at least one support stent, the method further including deploying at least one

support stent within the second segment of the leg to maintain the relative position of the first and second segments after deployment.

23. A method for placement of a biluminal endovascular graft system having two legs in a vessel of a patient's vascular system, at least one of the legs being adjustable in length, each leg having first and second attachment elements and a graft component with first and second ends, the method comprising:

providing a single delivery catheter which contains a first leg of the graft system, the leg being adjustable in length;

advancing the delivery catheter to a desired location in the vessel;

manipulating the delivery catheter to secure the first end of the graft component in the vessel with the first attachment element;

manipulating the delivery catheter to adjust the length of the first leg by positioning the second end of the graft a desired distance from the first end; and

securing the second end of the graft in the vessel with the second attachment element.

24. The method of claim 23 wherein the first leg is provided with a bellows region and wherein the step of manipulating the delivery catheter to adjust the length of the leg includes expanding or contracting the bellows portion of the leg to thereby adjust the length.

25. The method of claim 23 wherein the first leg includes a first segment and a second segment, the second segment being sized to fit within the first segment in a telescoping arrangement, the step of manipulating the delivery catheter to adjust the length of the first leg further comprising adjusting the relative position of the first and second segments such that the first end of the first leg is a desired distance from the second.

26. The method of claim 24 wherein the first leg includes at least one gripping stent, the method further comprising deploying at least one gripping stent in the bellows region.

27. The method of claim 25 wherein the first leg includes at least one support stent, the method further including deploying at least one support stent within the second segment of the first leg to maintain the relative position of the first and second segments after deployment.

28. A method for repair of an abdominal aortic aneurysm with a graft system having a graft component defining at least one lumen adapted to extend from the aorta into at least one iliac artery, the graft component having first and second ends, the method comprising:

providing a single delivery catheter which contains the graft system;

advancing the delivery catheter to a desired location in the aorta;

manipulating the delivery catheter to secure the first end of the graft component on one side of the aneurysm;

manipulating the delivery catheter to adjust the length of the graft component by positioning the second end of the graft component on the other side of the aneurysm a desired distance from the first end; and

securing the second end of the graft component in at least one iliac artery.

29. The method of claim 28 wherein the graft system includes an aortic stent and wherein the step of manipulating the delivery catheter to secure the first end of the graft component includes expanding the aortic stent radially outwardly to secure the first end of the graft component in the aorta.

30. The method of claim 28 wherein the graft system further includes an iliac stent, and wherein the step of securing the second end of the graft component further comprises deploying the iliac stent radially outwardly to secure the second end of the graft component in the iliac artery.

31. The method of claim 28 wherein the graft component is provided with a bellows region and wherein the step of adjusting the length of the graft component includes expanding or contracting the bellows portion of the graft component to thereby adjust the length.

32. The method of claim 28 wherein the graft component includes a first segment and a second segment, the second segment being sized to fit within the first segment in a telescoping arrangement and wherein the step of adjusting further comprises adjusting the relative position of the first and second segments such that the first end of the graft component is a desired distance from the second.

33. The method of claim 31 wherein the graft system includes at least one gripping stent, the method further comprising deploying at least one gripping stent in the bellows region.

34. The method of claim 32 wherein the graft system includes at least one support stent, the method further including deploying at least one support stent within the second segment of the graft component to maintain the relative position of the first and second segments after deployment.

35. An intraluminal stent capable of expanding from a first delivery configuration to a second deployed configuration for placement in a vessel of a patient's vascular system, the stent comprising:

a first portion having a substantially circular cross-section in the deployed configuration; and

a second portion attached to the first portion and having a substantially D-shaped cross-section in the deployed configuration.

36. The intraluminal stent of claim 35 wherein the second portion is defined by a substantially flat alignment surface and a substantially curved surface which intersects the alignment surface along two edges and wherein the attachment of the second

portion to the first portion is at a first point which aligns with one of the edges and a second point which aligns with the other of the edges.

37. A graft system for repairing an abdominal aortic aneurysm comprising a tubular graft component having a first end portion and a second end portion and a middle portion extending therebetween, wherein the cross-sectional areas of the first and second end portions is greater than the cross-sectional area of the middle portion.

38. The graft system of claim 37 further comprising an aortic stent secured to the first end portion of the graft component.

39. The graft system of claim 37 further comprising an iliac stent attached to the second end portion of the graft component.

40. The graft system of claim 37 further comprising an aortic stent attached to the first end portion of the graft component and an iliac stent attached to the second end portion of the graft component.

41. The graft system of claim 40 wherein the tubular graft component further includes a length adjustment element.

42. The graft system of claim 41 wherein the length adjustment element comprises a bellows region within the middle portion.

43. The graft system of claim 41 wherein the length adjustment element comprises a first graft component segment and a second graft component segment, the second graft component segment being sized to fit within the first graft component segment in a telescoping arrangement such that the length of the graft component can be adjusted by adjusting the relative telescopic position of the first and second segments.

44. The graft system of claim 42 further including at least one gripping stent adapted to be deployed within the bellows region of the graft component.

45. The graft system of claim 43 further including at least one support stent adapted to be deployed within the second segment of the graft component.

graft component segment